

REMARKS

Claims 1-65 are pending. Applicant acknowledges the Examiner's indication that claims 2-4, 11, 12, 22-25, 28-30, 45-47, 52, 53, 60 and 61 contain allowable subject matter, and that claims 31-44, 48-51, 54-59, and 62-65 are allowed. (Final Office Action, at 5.)

Applicant also thanks the Examiner for his time conducting a telephonic interview on July 17, 2003, with Applicant's undersigned representative. Applicant understands that the distinctions over U.S. Patent No. 5,072,382 to Kamentsky with regards to an integrated signal, integrating detector, and channel, as discussed during the interview, will be favorably considered when submitted in writing. Accordingly, it is respectfully requested that the Examiner consider the following, which reflect upon and expand upon the discussion during the telephonic interview.

I. Drawings

Figures 9 and 10 have been amended to include the label "prior art," as required by the Examiner. (Final Office Action, pg. 2.) No other changes are proposed, and no new matter has been added.

Although the figures depict structural elements from the prior art, Applicant maintains that the claimed invention is novel and non-obvious. For instance, claim 54 is directed to an apparatus comprising, among other things, "a computer configured to receive the integrated signal (S) and the integration time (ti), and to determine a velocity-normalized integrated signal (Sn), the determining comprising dividing the integrated signal (S) by the integration time (ti)." Thus, although a computer may be a known element in the prior art, Applicant contends that an apparatus comprising a computer configured as set forth in claim 54 is novel and non-obvious. See also Office

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Action dated December 11, 2002, pg. 8 ("Claims 31-44, 48-50, 54-59, 62-65 are allowable over the prior art of record.").

II. Rejections Under 35 U.S.C. § 102

The Examiner rejected claims 1, 5, 10, 14-17, 19, 21, 26, and 27 under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,072,382 to Kamentsky ("Kamentsky"). (Final Office Action, at 2-3.) The Examiner contends that Kamentsky discloses all limitations of claims 1, 5, 10, 14-17, 19, 21, 26, and 27, including "[1] scanning a scan window comprising one or more channels.... [2] detecting an integrated signal across the scan window ... [and (3)] using an integrating detector" (*Id.*) Applicant respectfully traverses the rejection.

1. Definition of claim terms

Each of the claims rejected under section 102 over Kamentsky contains or incorporates one or more limitations directed to an "integrated signal," an "integrating detector," and one or more "channels." Each of these terms are defined in the specification, under the section entitled "Definitions," and these express definitions apply for the purposes of the present examination. MPEP § 2111.01 ("During examination ... the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. ... when the specification provides definitions for terms appearing in the claims that the specification can be used in interpreting claim language." (citations omitted).)

An "integrated signal," as that term is defined in the present application, "means a signal which is accumulated over an integration time and where a signal is a function of the integration time." (Specification, col. 3, ln. 15-17.)

An “integrating detector,” as that term is defined in the present application, “means a detector which collects an integrated signal.” (*Id.*, col. 3, ln. 21-22.) Inserting the definition for “integrated signal,” the definition of an “integrating detector” is a detector which collects a signal which is accumulated over an integration time and where a signal is a function of the integration time. As disclosed in the specification, “[e]xemplary integrating detectors include but are not limited to charge coupled devices [CCDs], photodiode arrays, charge injection devices, and active pixel CMOS detectors.” (*Id.* col., ln. 22-25.)

A “channel,” as that term is defined in the present application, “means a region over which an integrating detector collects an integrated signal.” (*Id.*, col. 3, ln. 7-9.) Inserting the definition for an integrated signal, a channel is a region over which an integrating detector collects a signal which is accumulated over an integration time and where a signal is a function of the integration time.

Kamentsky does not teach or suggest these elements, as they are set forth in the rejected claims.

2. Kamentsky specifically requires and only discloses signals having a continuous output, and does not teach or suggest an integrated signal.

Kamentsky does not teach or suggest an integrated signal, *i.e.*, “a signal which is accumulated over an integration time and where a signal is a function of the integration time.” To the contrary, Kamentsky only discloses and specifically requires a continuous signal that can be digitized at some given rate. For example, according to Kamentsky, “[a]s the beam 12b scans across surface 28, a continuous optical analog data stream is produced by each of the instrument’s optical sensors 20, 22, 24, 26.” (Col. 13, ln. 1-3 (emphasis added).) Thus, the signal is continuous and it is not accumulated over an

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integration time. According to Kamentsky, "these continuous optical analog data streams are sampled and converted by the A/D converter and stored as digital data values in the computer memory." (Col. 13, ln. 17-20 (emphasis added).) Again, Kamentsky directly samples the continuous output, and does not perform any signal accumulation over an integration time. See also Kamentsky, Figure 5d, showing the continuous output of a detector (smooth line) and the periodic, point-by-point sampling (arrows) of individual data points; column 13, line 44, to column 14, line 11.

Accordingly, Kamentsky does not disclose an "integrated signal" and does not teach or suggest, for example, "detecting an integrated signal (S) across the scan window comprising one or more channels using an integrated detector," as set forth in claim 1. For at least this reason, Kamentsky fails to anticipate the presently claimed invention.

3. Kamentsky specifically requires and only discloses continuous output detectors, and is inconsistent with the use of integrating detectors.

Kamentsky does not teach or suggest an integrating detector, that is "a detector which collects a signal which is accumulated over an integration time and where a signal is a function of the integration time." In fact, the detectors specifically required and disclosed in Kamentsky are distinct from and incompatible with collecting a signal which is accumulated over an integration time and where a signal is a function of the integration time.

Specifically, in order to be compatible with Kamentsky's requirement for a continuous data stream (see section 2 above), Kamentsky uses only continuous (as opposed to integrating) detectors. The only disclosed detectors used in Kamentsky's method and apparatus are photomultiplier tubes (PMT). See, for example, column 8,

lines 24 to 35 ("Mirror 54 reflects part of the incident energy through filter 56 of the appropriate bandpass wavelength onto photomultiplier 24. Similarly, mirror 58 reflects the remaining energy through filter 60 to photomultiplier 26. The signals from the two photomultipliers are amplified and become additional inputs for the data acquisition circuit."). As the name implies, PMTs multiply or amplify a photocurrent, but do not accumulate a signal over an integration time.

Kamentsky also does not suggest any electronic integration of the continuous output from the PMTs. Rather, as shown in Figure 5 (arrows) data is recorded by periodic, point-by-point sampling (arrows) of individual data points. See also column 13, line 44, to column 14, line 11. In fact, since Kamentsky is directed to continuous, high-speed data acquisition, any temporal integration of a PMT's output would be inconsistent with Kamentsky's invention. See, for example, column 2, line 65, to column 3, line 6 ("According, to the present invention, the spot size is on the order of 10 microns in diameter and is sampled at a rate such that the distance traveled per time as the spot is scanned between consecutive sampled locations is approximately the spot size. This gives the benefit of processing a sample about four hundred times faster than with the small spot size without losing accuracy. As the size is decreased and the sampling rate is increased this benefit correspondingly decreases.").

Accordingly, Kamentsky does not disclose an "integrating detector" and does not teach or suggest, for example, "detecting an integrated signal (S) across the scan window comprising one or more channels using an integrated detector," as set forth in claim 1. For at least this reason, Kamentsky fails to anticipate the presently claimed invention.

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4. Kamentsky does not teach or suggest one or more channel.

The Examiner contends that “scan strips” of Kamentsky Figure 4 and column 10, lines 40-55, are the one or more channels of the presently claimed invention in claims 1, 5, 10, 14-17, 19, 21, 26, and 27. However, Applicant contends that Kamentsky does not teach or suggest one or more channels, *i.e.* one or more regions “over which an integrating detector collects a signal which is accumulated over an integration time and where a signal is a function of the integration time.”

In fact, as discussed above, Kamentsky does not teach or suggest any use of an integrating detector or an integrated signal. Further, both would be inconsistent with Kamentsky’s stated mode of operation and purpose. Necessarily, therefore, Kamentsky does not teach or suggest “a region over which an integrating detector collects an integrated signal.”

Accordingly, Kamentsky does not disclose a “channel” and does not teach or suggest, for example, “detecting an integrated signal (S) across the scan window comprising one or more channels using an integrated detector,” as set forth in claim 1. For at least this reason, Kamentsky fails to anticipate the presently claimed invention.

5. Conclusion with respect to section 102 rejection over Kamentsky.

Kamentsky does not disclose a “integrated signal,” an “integrated detector,” or a “channel.” Thus, Kamentsky does not teach or suggest, for example, “detecting an integrated signal (S) across the scan window comprising one or more channels using an integrated detector,” as set forth in claim 1. For at least these reasons, Kamentsky fails to anticipate the presently claimed invention.

Because Kamentsky fails to teach or suggest the elements discussed above, Applicant need not address the Examiner’s contentions concerning Kamentsky with

respect to other elements of certain claims. By not addressing those contentions, Applicant in no way acquiesces to those contentions.

Applicant respectfully requests reconsideration and withdrawal of the rejection under section 102 over Kamentsky.

III. Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 6-9, 11-13, 18, and 20 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kamentsky. (Final Office Action, at 4-5.) Applicant respectfully disagrees with and traverses the rejection for at least the reasons discussed above with respect to the rejection under section 102 over Kamentsky.

Reconsideration and withdrawal of the rejection under section 103 over Kamentsky is respectfully requested.

IV. Reissue Applications

Applicant acknowledges that the original patent, or a statement as to its loss or inaccessibility, must be received before the reissue application can be allowed.

CONCLUSION

Applicant respectfully submits that the present reissue application is in condition for allowance with claims 1-65.

Applicant respectfully requests that this Amendment under 37 C.F.R. § 1.116, wherein the only amendments are to Figures 9 and 10, where the label "prior art" has been added as required by the Examiner, be entered.

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The Examiner is invited to contact Applicant's undersigned representative by telephone at (202) 408-4092 to resolve any additional matters that may remain.

Please grant any extensions of time required to enter this Amendment and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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